

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty).

(PCT Rule 44bis)

Applicant's or agent's file reference 620WO	FOR FURTHER ACTION	See item 4 below
International application No. PCT/GB2005/000965	International filing date (<i>day/month/year</i>) 11 March 2005 (11.03.2005)	Priority date (<i>day/month/year</i>) 18 March 2004 (18.03.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant RENISHAW plc		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 19 September 2006 (19.09.2006) Authorized officer <div style="text-align: center; font-size: 1.2em;">Nora Lindner</div> e-mail: pt02@wipo.int
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22/05

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

POT RECD 18 MAY 2005

WIPO

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)Applicant's or agent's file reference
see form PCT/ISA/220**FOR FURTHER ACTION**
See paragraph 2 belowInternational application No.
PCT/GB2005/000965International filing date (day/month/year)
11.03.2005Priority date (day/month/year)
18.03.2004International Patent Classification (IPC) or both national classification and IPC
G01B5/008, G01B21/04, G05B19/401Applicant
RENISHAW PLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for International preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2005/000965

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2005/000965

**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, Inventive step or
Industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-17
Inventive step (IS)	Yes: Claims	
	No: Claims	1-17
Industrial applicability (IA)	Yes: Claims	1-17
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

1. Prior Art

The following documents are referred to:

D1: DE 198 09 589 A1

D2: WO 03/038375 A

2. Article 33(1),(2),(3) PCT (Lack of Novelty and Inventive Step)

1. The subject-matter of **claims 1, 14 and 17** is not novel, because **D1** as well as **D2** (see passages cited in the search report) disclose all features of these claims (as far as they can be understood: see below). In particular, these documents show a spiral scanning path. **D1** (c.7, l.48-50) specifically mentions that forces are acting perpendicular to the object surface. These forces can be interpreted as the presence of a servo direction vector as defined in the claims. Although the axes as specified in the claims are not literally mentioned in **D1** or **D2** and although **D2** does not literally mention anything that could be interpreted as a servo direction vector, the claims are so unclear (see below) that some axes and some vectors can easily be appointed in such a manner so as to take away novelty of the claims.
 2. A detailed analysis of the dependent **claims 2-13, 15 and 16** is, given the unclarity of the claims, currently not practicable. However, it does not readily appear that any of these claims define a feature which is both novel and inventive.
- 3. Article 33(1),(4) PCT (Industrial Applicability)**
- The subject-matter of **claims 1-17** appears industrially applicable.

Re Item VIII

Article 6 PCT (Lack of Clarity and Conciseness)

1. **Claims 1 and 14** appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness, which leads to a lack of clarity of the claims as a whole, as it becomes impossible to determine without undue burden the precise subject-matter for which protection is sought. The claims should have included only one independent method claim with dependent claims as appropriate (R.6.4 PCT).
2. In **claims 1 and 17** the expression "servo direction vector" is not well-defined. It is

unclear which direction is meant and whether/how this direction is related to any servo mechanism.

3. In **claims 1** (l.8,9) and **17** (l.6,7) an axis which intersects the object is mentioned. The actual orientation and position of this axis are unclear, because there is an infinite number of axes that matches such a definition. Because the definition of the servo direction vector is also unclear (see above), the intended relation between the axis and the servo direction vector is not understandable from the claims. Consequently, the intended limitation of the probe movement in the claims is unclear. Furthermore, from fig.1 and its description (p.6,l.30-p.7,l.15) it becomes apparent that the spiral path is situated about axis 14, which does *not* intersect the object (the axis intersecting the object is axis 16). This contradiction between the claims and the description creates further unclarity.
4. The expressions "directed towards the axis" in **claim 1** (l.12) and "directed towards the centre of said axis" in **claim 17** (l.10) are ambiguous. What is the centre of an axis? Does "towards an axis" only imply any direction towards an actual intersection with the axis or all also all directions that, when followed, lead to a position closer to the axis, i.e. also directions that do not necessarily intersect the axis?
5. **Claims 1** (l.16,17) and **17** (l.15-17) mention that the servo direction vector is "at an angle to a plane perpendicular to ... path". However, unless an angle of zero degrees is considered, this is in contradiction to p.8,l.1,2 in combination with fig.4 and p.9,l.24,25, from which it can be concluded that the servo direction vector is parallel to, or lying in, the plane in question. This creates further unclarity regarding the orientation of the servo direction vector.
6. **Claim 17** does not only define the apparatus itself (controller plus drive means), but also its relationship to a second entity (object with an axis) which is not part of the claimed device. In other words, the device is only defined when the object and its axis are known. This leaves it unclear whether a combination of device and object is claimed and, if not, what the structural features of the device per se are.
7. **Claim 14** does not clearly specify the probe movement. It only defines that it moves on the second axis. However, with particular orientations of the first and second axes, this definition includes continuous movement away from the object, or movement parallel to the object at some distance from its surface. Hence, the scope of **claim**

14 is broader than justified by the description and drawings and **claim 14** is thus not supported by the description as required by A.6 PCT.

Other

1. The relevant background art disclosed in **D1 and D2** is not mentioned in the description, nor are these documents identified therein (R.5.1(a)(ii) PCT).
2. The features of the claims are not provided with reference signs placed in parentheses (R.6.2(b) PCT).